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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/667,140

09/17/2003

Attila Bicsak

915-001.019

7193

4955

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07/26/2006

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EXAMINER

WOOD, WILLIAM H

ART UNIT

PAPER NUMBER

2193

DATE MAILED: 07/26/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/667,140	<b>Applicant(s)</b> BICSAK ET AL.	
	<b>Examiner</b> William H. Wood	<b>Art Unit</b> 2193	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 17 September 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date. _____  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>03152004</u> .  | 6) <input type="checkbox"/> Other: _____                                    |

**DETAILED ACTION**

Claims 1-10 are pending and have been examined.

***Information Disclosure Statement***

1. information disclosure statement (IDS) submitted on 15 March 2004 is being considered by the examiner.

***Claim Rejections - 35 USC § 112***

2. following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 2, 5 and 6 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 2 recites the limitation "the block execution". There is insufficient antecedent basis for this limitation in the claim.

Claim 5 recites the limitation "the basic block". There is insufficient antecedent basis for this limitation in the claim.

Claim 6 recites the limitation "the corresponding block". There is insufficient antecedent basis for this limitation in the claim.

***Claim Rejections - 35 USC § 101***

4. U.S.C. 101 reads as follows:

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Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

5. Claim 8 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. The claim recites “a computer program” and is thus software per se and not statutory. Claim 9 corrects this as the Specification defines “a carrier medium” as hardware (page 9, lines 6-7).

### ***Claim Rejections - 35 USC § 102***

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

7. Claims 1-10 are rejected under 35 U.S.C. 102(a) as being anticipated by **Sutter** et al., “Sifting out the Mud: Low Level C++ Code Reuse”.

#### **Claim 1**

**Sutter** disclosed a method for procedural abstraction (*page 277, section 3, “abstracting multiple-occurring instruction sequences”; pages 281-283, section headings*) of instruction sequences in a computer program comprising the steps of

creating a control flow graph of the program, said flow graph including basic blocks of instructions (*figures 2 and 3; page 281, section 4.2*),

traversing through the basic blocks in order to detect multiple occurrences of a same instruction sequence (*page 281, right column, last paragraph to page 282, four bulleted items; page 283, section 4.3*),

creating a function including the longest sequence common to at least two instruction sequences from a plurality of sequences having a common instruction sequence of equal or shorter length compared to said longest sequence (*page 283, right column, first paragraph, "larger blocks are greedily abstracted first"*), and

replacing the original occurrences of said instruction sequences in said plurality of sequences with a reference to a proper position in said created function (*page 277, section 3, "all occurrences of the sequence are replaced by calls to that single procedure"*).

### Claim 2

**Sutter** disclosed a method of claim 1, wherein the blocks are traversed in opposite direction to the block execution (*page 279, left column, second bulleted item, "[I]f the blocks are not identical, the number of identical instructions going backwards from the exit points of the blocks is added ..." thus opposite traversal of blocks*).

Claim 3

**Sutter** disclosed a method of claim 1, wherein said proper position is the position from which onward the sequence in the function matches with the original occurrence of the replaced instruction sequence (*page 277, section 3, “all occurrences of the sequence are replaced by calls to that single procedure”; page 281, section 4.1, last paragraph*).

Claim 4

**Sutter** disclosed a method of claim 1, wherein said reference is substantially a function call or a branch instruction (*page 277, section 3, “all occurrences of the sequence are replaced by calls to that single procedure”; page 281, section 4.1, last paragraph*).

Claim 5

**Sutter** disclosed a method of claim 1, wherein said created function contains substantially the basic block whereto said longest sequence belongs (*page 283, right column, bulleted item 2, “sequences are placed in separate basic blocks”*).

Claim 6

**Sutter** disclosed a method of claim 1, wherein said instruction sequences comprise the last instructions of the corresponding block (*page 283, section 4.3, first paragraph, “abstracting partially matched basic blocks involved two*

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*important special cases: saves and restores ... [m]ost of the time ... the restores occur in blocks ending with a return instruction").*

Claim 7

**Sutter** disclosed a method of claim 1, wherein after creating the flow graph said basic blocks are divided into a plurality of block sets, said blocks in different sets comprising no common instruction sequences (*page 283, second bulleted item, "sequences are placed in separate basic blocks"*).

Claims 8-10

The limitations of claims 8-10 correspond to the limitations of claim 1 and as such are rejected in the same manner. Computers and memory demonstrated in the first paragraph of section 1 on page 275.

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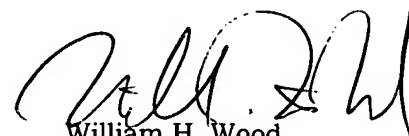
***Correspondence Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to William H. Wood whose telephone number is (571)-272-3736. The examiner can normally be reached 9:00am - 5:30pm Monday thru Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kakali Chaki can be reached on (571)-272-3719. The fax phone numbers for the organization where this application or proceeding is assigned are (571)273-8300 for regular communications.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR systems, see <http://pair-direct.uspto.gov>. For questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)305-3900.



William H. Wood  
Patent Examiner

AU 2193

July 18, 2006